Survival and exit in a distorted environment: Indonesian manufacturing establishments in the Suharto era, 1975-1995

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Abstract

This paper focuses on the factors influencing plant exit in the Indonesian manufacturing sector for the period 1975-95. The estimation of the probability of plant exit is done using the non-parametric Kaplan-Meier survivor function, and shows that half of manufacturing plants present in 1975 have been renewed within 10 years, and that only just over 8% of plants present in 1975 survived the 19-year period. This underlines the importance of the scope of plant turnover.

The core of the paper assesses the impact of different plant characteristics on hazard rates. We use the non-parametric Cox proportional hazard function in order to test for a link between hazard rates and several plant characteristics, allowing the baseline hazard to vary by industry, province and year of entry of plants (cohort effect).

We test for the effects of several plant characteristics on hazard rates. Higher relative plant Total Factor Productivity (TFP) is expected to lower exit probabilities. A large plant size is also expected to lower exit probabilities. We consider the effects of ownership type, distinguishing between public domestic, private domestic and private foreign ownership. Public plants are expected to have lower exit probabilities because of government protection and bailouts possibilities, foreign-owned plants are also expected to face lower exit probabilities. The literature on Indonesian political economy suggests that the share of gifts to charities and donations in total output is a good indicator of plant-level corruption, we expect this variable to lower exit probabilities at least in the pre-deregulation period.

We find that higher relative productivity levels lower hazard rates, but only up to the end of the 1980s. In the 1990s, relative productivity does not seem to affect hazard rates significantly. The most important explanatory variable remains plant size, and larger plants are less likely to exit than smaller plants. We also find that plants with any level of foreign or public domestic ownership have more survival chances than private domestic plants. The share of gifts to charities and donations in total output does not significantly affect hazard rates.

We then study two sub-samples separately: the small and medium plants (less than 500 employees), and the large plants (between 500 and 2000 employees), leaving out the extra-large plants (over 2000 employees). For the small and medium scale segment of the population, relative productivity and size lower hazard rates. However, neither relative TFP nor size affect hazard rates for plants within the large-scale sector, while public ownership leads to hazard rates close to zero. This is a strong result that clearly underlines market duality. It also suggests that market distortions acted probably more through state ownership than payment of corruption fees by private plants.

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